THE NEW ZEALAND

MARINE DEPARTMENT JOURNAL

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The department's new research ship *James Cook* provides the backdrop as the Prime Minister examines the ship he had just commissioned. Also shown are Mr G. D. Waugh, Director of Research, the Minister of Marine, Hon. W. J. Scott (partly obscured) and Captain J. Brew, Master of *James Cook*.

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"JAMES COOK" AT SEA AGAIN

On Monday 24 February, Cabinet authorised the Minister of Marine to make an offer to the Wellington representatives of the Norwegian Akers Group for the purchase of one of the two large Sea Products Ltd. trawlers. Two days later Mr Scott and Mr Kerr went to Nelson and made a thorough inspection of both *Sea Harvester I* and *II* and shortly afterwards it was announced that the Government was to buy *Sea Harvester II* at a cost of approximately $280,000.

These cold facts relating to the Government's purchase of *Sea Harvester II* do not give any indication of the considerable and urgent discussions which took place immediately prior to its purchase. The acquisition of a new ship capable of undertaking deep sea research had been a dream of the department for some considerable time. Although the *Ikatere* had been performing extremely valuable services on inshore research work in northern waters, there was a serious gap in research knowledge, both inshore and offshore, throughout the length of the New Zealand coastline.

While Government had realised the necessity for the purchase of a research ship capable of performing urgent long term research work the construction of a suitable vessel would normally have cost about $1 million. The acquisition of a research ship had been recognised by the Fisheries Committee of the National Development Conference and a recommendation to this effect was contained in their final report to the Conference during May.

Had the fishing industry in New Zealand been in a position to purchase this ship for commercial purposes Government would not have made an offer for its purchase. However, no satisfactory bids were received by the Receiver of Sea Products Ltd., and when it was apparent that both ships would be lost to New Zealand an urgent Government decision ensured that the department would obtain a new research ship at a very attractive price, and on 1 April this year the department took over *Sea Harvester II*.

Sea Harvester II was constructed at Trondheim in Norway in 1966 as the second of two ships for the newly formed Sea Products Ltd. Travelling with the ship as mate on its delivery voyage in late 1966 was John Brew who later was to command *Sea Harvester I*, the department's technology vessel *W. J. Scott* and is now the first Master of *Sea Harvester II*, renamed *James Cook*.

James Cook is a deep-sea stern ramp trawler of all steel construction, gross tonnage of 573 tons and an overall length of 138 ft. She is powered by a 12-cylinder Lister diesel engine giving her a service speed of 12 knots and has accommodation for 5 officers, 7 crew, and 5 scientific staff.

With the acquisition of the *James Cook* on 1 April it was vital that she be made operational as soon as possible. The ship had been lying idle at Nelson for over 5 months and prior to that had been continuously fishing since her arrival in New Zealand in January 1967. Preliminary inspections revealed that while the ship was in first class condition a considerable amount of work was necessary to fit her out for her new role as a fisheries research vessel.

The *James Cook* during her refitting at Nelson.

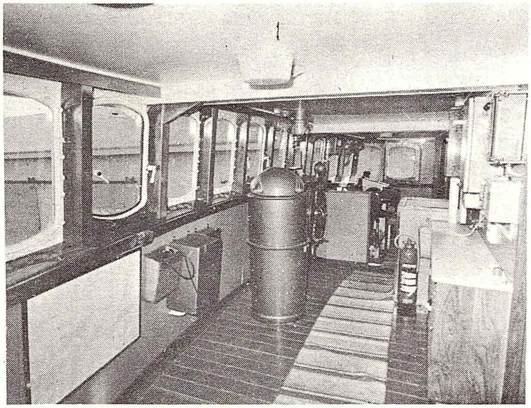
This included the complete removal of the fish meal plant, construction of new toilet and shower facilities and laboratory space, the installation of work benches, sinks, and other equipment on the fish deck, a complete overhaul of engines and ship's gear, and a complete repaint.

Following the purchase of the ship it was decided that she would remain based at Nelson until the new laboratory and wharf complex was constructed at Evans Bay. The task of co-ordinating the work fell to Graeme Freeman the department's administration officer and Dick Fitzgerald, the Senior Engineer Surveyor, both at Nelson. While work was proceeding at Nelson, urgent consideration was being given by the Secretary to the crewing of the ship and detailed work on its programme was being carried out by the Research Division.

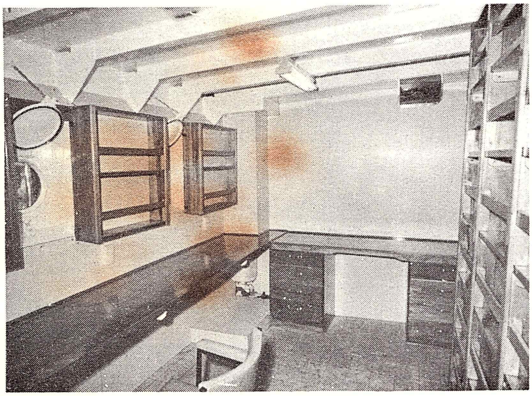
Staff throughout the department were invited to put forward suggestions for the renaming of the vessel. More than 50 names were suggested and from a short list the Minister agreed that the ship be renamed *James Cook*.

The department was fortunate that in Captain J. Brew it already had an officer with considerable experience as Master of the *Sea Harvester I* and his appointment as the first Master of the *James Cook* was subsequently confirmed. In addition to the Master, the positions of First and Second Mate, and Chief and Second Engineer were advertised and the following officers were appointed: First Mate, Mr R. J. Davies; Second Mate, Mr G. V. Turner; Chief Engineer, Mr E. Kaminski; Second Engineer, Mr L. J. Nicol. In addition to the ship's officers a crew of seven was recruited including a resident technician Boyd Marshall who is responsible for liaison between the crew, scientific staff, and the officers.

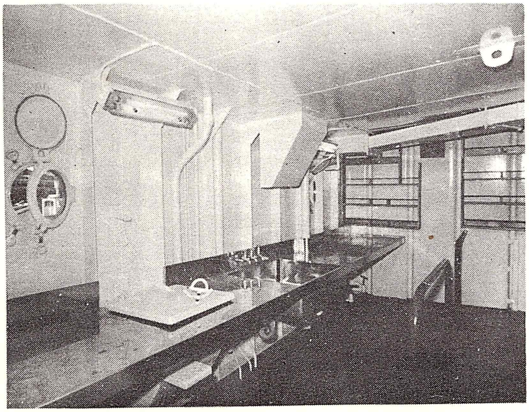
With work completed on the ship at Nelson the *James Cook* sailed for Lyttelton where she was dry-docked, her hull scraped and painted, and her



A view of the bridge.



New laboratory space constructed on board *James Cook*.

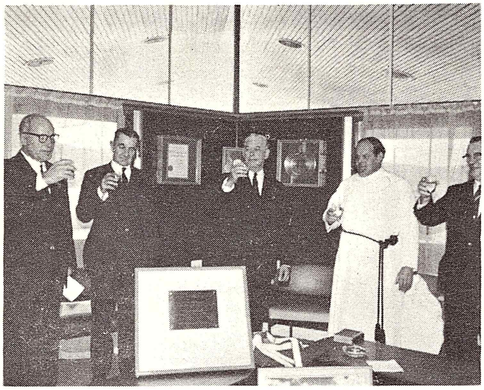


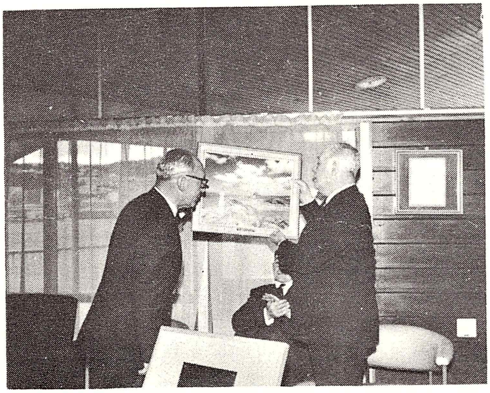
Work benches on the fish deck.

survey completed. Returning to Nelson the crew assembled for the first time and on 1 July she arrived at Wellington where she tied up at the Overseas Terminal in readiness for the commissioning ceremony the following day.

The official commissioning ceremony was followed by a buffet luncheon and inspection of the ship. Official guests represented many sections of commerce and industry, Government departments, the Fishing Industry Board, and departmental representatives.

In commissioning the *James Cook* the Prime Minister made reference to the development of the fishing industry in recent years and noted that it had come from relative obscurity to earn more than $40 million on the export market during the past 5 years. The Prime Minister said the industry had experienced five record breaking years in a row as an exporter. In 1968 the industry beat all previous records by earning nearly $15 million in exports. This figure was the target set by the National Development Conference for 1973. During the first 3 months of this year, these exports were worth more than $6 million. This was nearly half the value of the total fishery exports for last year.





A toast to the *James Cook*. Left to right: Mr Kerr, Mr Scott, the Prime Minister, Rev. S. Hadlow, and Mr S. A. Whitehead M.P.

Captain Brew describing the ship's navigational aids to the Prime Minister and Secretary.

The Secretary presenting the Prime Minister with a colour photograph of Castlepoint Lighthouse.

The progress made by the fishing industry was an indication of what can be achieved when an industry is given encouragement. Mr Holyoake said the encouragement given by Government was varied and wide in scope. The work of the *James Cook* will help the fishing industry reach a more balanced state where it is not so reliant on one main species for the expansion of its export trade. It will help the industry reach and possibly overreach the target of the National Development Conference.

The Prime Minister then unveiled a commemorative plaque and proposed a toast to the *James Cook*.

After the blessing of the ship by the Rev. Selwyn Hadlow, Missioner for the Port of Wellington, the Secretary referred to the work of the department in the fisheries field, the *James Cook*, and her crew. Mr Kerr then introduced Duncan Waugh, the Director of Research, who gave an outline of the programme for the *James Cook* in the immediate future. Concluding the official function Mr Kerr presented the Prime Minister with an attractive framed colour photograph of the Castlepoint Lighthouse.

Next day the *James Cook* left on her first research cruise.

FIRST DAY COVER SETS PRECEDENT

The recent issue of new lighthouse stamps by the Government Life Office again depicts the department's manned lighthouses, namely Moeraki Point, Puysegur Point, Baring Head, Cape Egmont, and Dog Island. The designer of the stamps, Mr Berry, who is well known for his work on decimal currency design, was assisted by photographic material supplied by Mr Norm Miller, Lighthouse Instructor, and Mr Bill Kemp the Lighthouse Inspector.

The stamps, notable for their brilliant colouring, replace the existing Government Life stamps which have been in circulation for many years.

To mark the occasion the department printed special first-day covers showing both old and new stamps. These covers have been circulating around light stations since March, the Principal Keeper signing beneath the stamp which depicts his lighthouse. Currently these first-day covers are in Britain where they are being signed by the Principal Keeper of Eddystone Lighthouse. On their return, copies will be presented to Government Life officers, the N.Z. Post Office, and the Ministry of Works, all of whom have been associated with the Light Service for very many years, and the Principal Keepers involved.

It is believed that this is the first time that any Government department, apart from Government Life, has issued its own first-day cover and the success of this public relations exercise is due largely to the excellent co-operation received from the Government Life Office, the Post Office, the RNZAF and Trinity House and most important, the Principal Light Keepers themselves.

These covers are expected to have considerable intrinsic value as due to cost and other factors it was only possible to prepare 38 covers. It is hoped to show an illustration of one of these covers in the next issue of the Journal.

TUNA INVESTIGATIONS CONTINUE

Following on from last summer's fisheries programme on tuna in the Bay of Plenty conducted by Don York of the Fisheries Division, increased tuna fishing activity can be expected in this area in the coming summer. Last season, Mr York worked out of Whakatane on a 31 ft vessel owned by a Whakatane fisherman, Mr MacIntyre. The programme was concerned with sonar buoy operations to detect the presence of tuna, and to record feeding and other attraction noises with a view to using these in future seasons to lure tuna to the catching vessel. During the programme the Secretary visited Whakatane and saw at first-hand the experimental work being carried out.

It is expected that Mr York will continue his tuna programme in the Bay of Plenty in the coming season. On his return to Wellington, Don York brought with him a sample of smoked albacore which was sampled by some Head Office staff. That it was soon eaten was sufficient evidence of its popularity.

CATCH SAMPLING VALUABLE RESEARCH PROGRAMME

Since August 1966 the Research Division has been engaged in a programme of catch sampling to assist the practical fisherman in his work. The initial objects of the scheme are to examine the minimum organisation necessary to enable the collection of catch measurements.

The programme allows for the collection of samples of 5 species of trawled fish from 22 fishing areas around the coast of New Zealand every 2 months. The areas selected are those thought to yield the most satisfactory workable results. The species with which the programme is concerned are tarakihi, snapper, gurnard, sand flounder, and elephant fish, samples of which are collected by technicians who go to sea aboard both commercial and Government run trawlers.

As soon as the catch is brought aboard a random sample is measured and the sex of a sub-sample recorded. Also recorded are details of the trawl gear and speed of tow, the duration and position of tow, the depth of the water, and the composition of the catch from which the sample is taken, i.e., the total weight of fish and the proportion of different species.

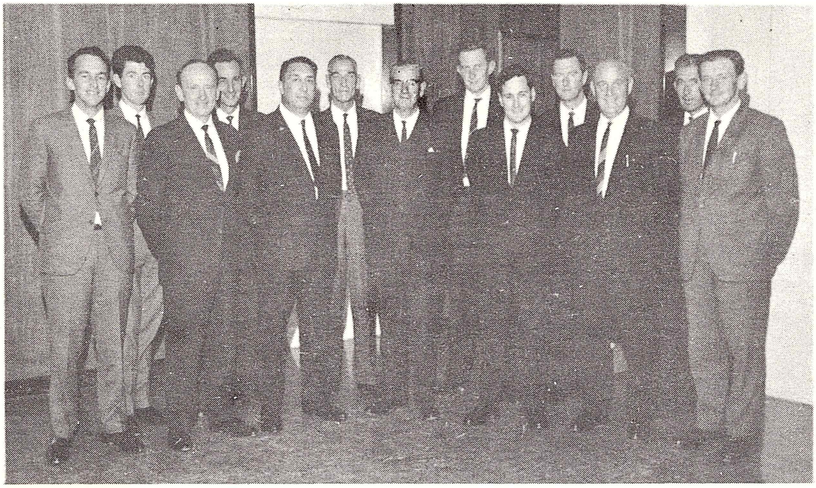
The time spent steaming to and from the fishing grounds is also recorded so that this information combined with readily available data concerning the fishing vessel from which the samples are taken can be used to assess fishing effort.

Pairs of technicians concerned with the programme are based in Auckland, Christchurch, and Wellington, each pair being responsible for visiting seven or eight fishing areas. Their work is co-ordinated at the Fisheries Laboratory in Wellington, under the control of Chris Thomas of the Fisheries Research Division.

In cases where technicians join fishing vessels already scheduled to fish specific grounds, many owners and skippers have co-operated most willingly with the division. Sometimes it is necessary to charter a vessel to reach fishing grounds not fished regularly throughout the year.

To date, 262,000 fish have been measured and samples have been sufficiently large to show statistically significant trends in fish length differences from north to south. Results obtained so far show for instance that there is an increase in the mean length of snapper, gurnard, and elephant fish towards the southern limits of their range.

It has been demonstrated that with the present organisation, useful information on the size, structure, and the abundance of species can be obtained and significant differences in fish population structures can be detected.



Among conferences held in Head Office over recent months was one for the Department's District Administration Officers scattered throughout New Zealand. In the above photograph officers who took part in the conference are (left to right): John Wisker, Christchurch; Trevor Coleman, Head Office; Brian Turner, Auckland; Graeme Freeman, Nelson; Don Gordon, Head Office; Doug Thorsen, Picton; the Assistant Secretary, Mr C. W. Franks; Kevin Smith, Head Office; Barry Allen, Bluff; Tony Minett, Head Office (formerly Senior Administration Officer); Bill Cameron, Dunedin; John Burnand, Whangarei; and Barney Scully, Wellington.

GREEN, WHITE, AND BUFF

The varied assortment of colours of departmental vessels is undergoing a gradual change with the adoption of a uniform colour scheme for all our ships. The first ship to receive its new colour scheme was the Bluff/Stewart Island ferry *Wairua* which was painted with a light green hull, white top works, and a buff funnel. Following the success of this colour scheme the Cook Strait lighthouse servicing vessel *Enterprise* adopted the colours when constructed and only recently the new research vessel *James Cook* took on the same colour scheme. Other departmental vessels will be similarly painted when they are surveyed.

PAMIR PRIZE PRESENTED

The Pamir Prize for the most outstanding candidate taking the Master Home Trade or Master Foreign Going examinations conducted by the Nautical Schools, has been won by Chief Officer, S. C. Blake. The prize, a pair of binoculars, was presented to Mr Blake by Mr B. E. Turner, the Department's District Officer in Auckland on behalf of the Hon. W. J. Scott, Minister of Marine.

STEPHENS ISLAND RECEIVES THE PRESS

Stephens Island Lighthouse in Cook Strait was recently visited by a staff reporter from the *Nelson Evening Mail*. Resulting from his visit to the island, their inhabitants, both animal and human, received considerable publicity in the paper including photographs of views from the island, unloading stores from the *Enterprise* for the renewal of the railway track, and lightkeepers families.

THE ENTERPRISING *"ENTERPRISE"*

The department's Cook Strait servicing vessel *Enterprise* has been much in the news in recent months. In April it acted as a time-keeping vessel for the yacht races associated with the 14 ft Javelin Class National Yachting Championships held in Picton Harbour. The *Enterprise* was at hand to rescue a small boat at the entrance to Wellington Harbour and was also engaged in search and rescue operations for the ill-fated *Golden Dawn* convoy from the Chatham Islands.

In recent weeks she has been helping the *W. J. Scott* in midwater trawl experiments in Tasman Bay, and has spent a considerable time off the Island Bay coastline searching for the fishing vessel *Provider* which disappeared in May while on a fishing trip.

In addition to all these extraordinary tasks the *Enterprise* has maintained a regular schedule of servicing trips to the Brothers and Stephens Island Light stations and to automatic lights in the Cook Strait area. A major recent task has been the towing of material on barges to Stephens Island for the construction of a new tramway to the top of the island.

Under the expert handling of her master, Brian Pickering, the *Enterprise* is a familiar figure in the Cook Strait/Marlborough Sounds area and is doing a valuable job in frequently rough and difficult conditions.

The *Enterprise* acting as "Start–Finish" boat during the 14 ft Javelin Class National Yacht Championships at Picton.

FISHERIES RESEARCH CONTINUES AT CHATHAM ISLANDS

Currently the department has a research team carrying out research into crayfish at the Chatham Islands. Research scientists Roger Coombs and John Lesser have been visiting the islands since last July at approximately 2-monthly intervals, to take body measurements of crayfish as they come to the processing works, and to carry out a crayfish tagging programme.

When questioned, Roger Coombs stated that at the present pace of work it would possibly be 2 or 3 years before there was a minimum of basic data assembled on which to base reasonable sound estimates of the crayfish population and the rate of its decrease in the Chathams.

Crayfish produce a vast number of eggs and it has been estimated that females carry in the region of up to a quarter of a million eggs each. While it is probable that most of these eggs hatch it is not certain what happens to them afterwards. Dependent upon climatic conditions it may take crayfish up to 7 or 8 years to grow to the legal catching size of 10 in. and climatic conditions could be a greater menace to the Chatham Islands crayfish than having too many fishing boats catching them.

Roger Coombs said that there was very little published material on crayfish and that the department was at an early stage, just sorting out basic data problems. Quite a lot of material was being gathered from fishing boat returns which list the date, place, type, and quantity of catch, and on visits to the island the research team take body measurements of crayfish as they come to the processing works.

In addition to the measurement programme, coded plastic tags bearing a reward notice are also being injected behind the body shells of hundreds of crayfish which are then released into the sea. Last July, about a 1,000 crayfish were tagged; only 10 of these have been caught. A further 200 were tagged in January of this year and 4 have been traced. All tags which had been found on crayfish were returned within 6 weeks of releasing the animals and this could mean the tags fall off or that the tagged crayfish die. None of the crayfish had moved more than 5 miles from where they were released.

In addition to the work being carried out at the Chatham Islands Mr R. J. Street a scientist at Dunedin, is also working part time on the study of mainland crayfish, and John Lesser is carrying out research at the laboratory in Wellington on the breeding and the very young stages of crayfish. As a point of interest the first research cruise of the *James Cook* was to Castlepoint region where John Lesser took planktonic samples in an endeavour to locate the planktonic crayfish which are believed to exist in the area.

NEW ZEALAND PORTS AUTHORITY STARTS WORK

Following legislation passed in 1968 which established the New Zealand Ports Authority, the Authority officially took up its duties on 10 April this year. The New Zealand Ports Authority will be responsible for the control of harbour development in accordance with national planning.

The authority is being served by the Marine Department and it is expected that as the Authority's work increases, the servicing team will expand. Secretary to the Authority is Mr Ian Hamlin who was formerly Secretary to the Transport Commission which ceased functioning on 30 June. As indicated elsewhere in this Journal, Mr W. A. Cullen has been appointed Chief Executive Officer and Mr R. Doornbos is currently seconded from the Ministry of Transport as an Investigating Officer.

In the above photograph, taken in the Minister's office when the Authority first convened, are shown from the left – the Secretary for Marine, Mr Kerr; Rear Admiral J. O'C. Ross, until, recently Chief of the Naval staff; Mr A. T. Gandell, formerly General Manager of the New Zealand Railways; Mr J. R. Sutton, formerly Chief Engineer with the Auckland Harbour Board; Hon. J. K. McAlpine, formerly Minister of Transport (Chairman); the Minister of Marine, Hon. W. J. Scott; Captain J. B. McGowan, formerly Chairman of the Otago Harbour Board and the Secretary, Mr I. Hamlin.

P.K's AT SCHOOL

A further advanced training school for Principal Keepers was held at the Seaview School during May. Attending the school were Messrs W. G. Atkinson, Cape Saunders; C. J. Bonnington, Nugget Point; B. H. Hopper, Cape Reinga; B. M. Richards, Godley Head: and N. L. Wilson, Cuvier Island. This was the second course of its nature to be held at the school this year and a further course for new appointees has been arranged for later in the year.

NOT FROM OUTER SPACE

John Wisker, District Administration Officer at Christchurch has recently been plagued by inquiries concerning a mysterious object fished out of Akaroa Harbour during June. According to reports received the object has been photographed, measured, probed, and hefted by reporters and photographers and there were many suggestions as to what it was. Finally it turned out to be a Japanese marker buoy constructed of fibreglass, wood, and stainless steel. It was about 9 ft long, torpedo shaped, with a flag on the top. It is understood that John Wisker wished that he had never heard of this mysterious object and he is quoted as saying—"But its got no machinery inside, it doesn't tick, and there's no where for any little green men to sneak out". Such is the life of a District Administration Officer!

AUTHORS A'PLENTY

Writing would appear to be the hobby of some departmental officers. Tom Clark, Principal Keeper at Castlepoint Lighthouse, known for his book *The Sea is My Neighbour*, and Captain Gordon Henry of the Head Office Nautical Division, Editor of *On Deck*, the Journal of the N.Z. Company of Master Mariners, are two officers who come to mind.

Regular subscribers to the Auckland *Weekly News* will, no doubt, have noticed the name M. V. Linton appearing as author on articles in this publication. Mark Linton is the department's foreman/mechanic in the Lighthouse Maintenance Section in Auckland, his work taking him to all the automatic lights and manned light stations in the Auckland district. The unique nature of many of the department's activities makes ready-made material for any budding author and, no doubt, provides the odd dollar or two of pocket money.

OAMARU AND ITS SEAWEED PROBLEM

Following the pollution of the Oamaru foreshore by large quantities of seaweed in April 1968 the department carried out some investigations from a chartered vessel, the *Delphis*, led by the department's biologist, Mr D. H. Stead. The dredging operation indicated that the major areas of this weed lay well offshore and it was only in severe weather that it was torn from the sea bed and driven on to the foreshore.

Consequently the problem was not basically an Oamaru problem as the weed was not located immediately adjacent to the Oamaru coast.

The department's report indicated that the material could be used as a basis for fertiliser being composed mainly of animal protein, but it considered that this line of development would be hampered by handling problems and lack of knowledge of suitable processing techniques.

STAFF NOTES

The last 3 months has seen further new faces joining the department and to the following new members of the staff we extend a cordial greeting:

Auckland District Office

Mr A. J. C. MacPherson (Inspector of Fisheries, Tauranga); Mr R. A. Gooch (Inspector of Fisheries, Whakapirau); Mr R. F. Sharp (Engineer Surveyor, Auckland); Mr A. R. King (Oyster Farms Manager, Whangarei); Mr G. C. Roper (Lighthouse Electrician, Auckland) and Mr G. H. Cockshott (Section Clerk).

Wellington District

Mr M. R. Connolly (Engineer, *W. J. Scott*, Nelson); Mr P. E. Roberts (Scientist); Mr G. R. Batty (Clerk, Nelson); Mr B. Ransby (Technician Wellington); Mr P. Dinamani (Scientist, Wellington); Mr G. D. James (Scientist, Wellington); Miss L. J. C. Brookes (Editorial Assistant, Wellington); and Mr G. S. Daue (Lighthouse Mechanic, Wellington).

Head Office

Mr R. D. Cook (Clerk, Head Office); Miss K. P. Anderson (Clerk, Head Office); Dr D. Eggleston (Supervisor, Fisheries Scientists); Mr T. Tahana (Clerk); Mr I. C. Jack (Assistant Accountant); Mr V. E. Donnelly (Senior Administration Officer); Mr W. E. Wheatley (Administration Officer, Head Office); Mr R. Doornbos (Investigating Officer); Mr K. R. Parsons (Clerk, Harbours and Shipping Section); and Mr G. E. Varcoe (Overseer, Seaview).

Westport

Mr B. F. Jordan (Clerical Assistant) and Mr B. H. Quinn (Fitter/Turner).

Christchurch

Mrs M. L. Miettunen (Clerk).

Invercargill

Mrs P. L. Walkinshaw (Clerk).

Amongst those who left the Marine Department were –

Mr J. F. Wright, Engineer Surveyor, Auckland;
Mr A. D. Thomas, Inspector of Fisheries, Auckland;
Mrs N. D. Finn, Clerk, Bluff;
Miss M. J. Pong, Senior Shorthand Typist, Head Office;
Mr C. G. Alves, Technician, Head Office;
Mr W. B. Olsen, Launchman, Picton;
Mr W. J. Skilton, Tug and Relieving Engineer, Westport;
Mr L. C. Hu, Gear Technologist, Head Office;
Mrs E. B. Leatherbarrow, Editorial Assistant, Wellington;
Mr J. A. Watling, Clerk, Head Office;
Mr D. Goodwin, Nautical Surveyor, Invercargill;
Mr J. Q. McDaid, Accounts Clerk, Auckland.

In addition to the arrival and departures some of the staff received promotion during the last 3 months and to the following we offer our congratulations:

Mr K. Smith, Office Inspector, Head Office;
Mr F. Leach, O. & M. Officer, Head Office;

Mr A. M. Minett, formerly Senior Administration Officer transferred on promotion to Internal Affairs Department;

Mr P. J. Lindsay, formerly Administration Officer, transferred on promotion to Defence Department;

Mr B. A. Martin, now Secretary, Pollution Advisory Council;

Mr H. M. Littlewood, transferred on promotion to Senior Accounts Clerk, Tourist and Publicity Department;

Mr L. G. Russell, now Co-ordinator Rock Oysters, Auckland.

APPOINTMENTS

Mr W. A. (Bill) Cullen, Executive Officer of the Harbours and Shipping Section of Head Office, has recently been appointed Chief Executive Officer to the New Zealand Ports Authority.

Bill Cullen joined the Marine Department in 1940 as a clerical cadet and has spent all his service in the department. During his 29 years with the department he has acted in the capacities of Staff Clerk, Senior Clerk, Staff Training Officer, Secretary to the Board of Examiners under the Boilers, Lifts, and Cranes Act 1950, Section Officer, Harbours and Foreshores Division, and his current position which he has held since 1964. During the war he served both in the Army and Navy spending some time overseas. He attended a Ports Seminar in Singapore in 1968.

Mr V. E. Donnelly recently took up his appointment as Senior Administration Officer, Head Office.

Mick Donnelly joined the Government in 1939 as a cadet with the Public Trust Department. In 1942 he joined the Navy returning from overseas service in 1946. He transferred to the Transport Department as Accounts Clerk in 1947 before taking up the position of Accountant with the Land and Income Tax Department at Greymouth in 1949. He remained with this department until 1959 when he was appointed Administration Officer with the Antarctic Division of DSIR. During his service with this department he wintered over as Leader at Scott Base in 1961. In 1964 he was appointed Office Inspector in the Marine Department, transferring on promotion to a similar position in the Civil Aviation Department where he remained until he rejoined this department.

TONNAGE CONFERENCE AND NEW COOK STRAIT FERRY

Mr H. D. M. Jones, the department's Deputy Chief Engineer Surveyor, has recently returned from a 2-month visit in the United Kingdom. The main purposes of his visit were to attend the International IMCO Conference on Tonnage Measurement in London and hold discussions with the United Kingdom consultants assisting with the design of the third Cook Strait ferry.

The tonnage measurement of ships is a complex subject with wide financial, engineering, and other ramifications in the shipping world. Tonnage measurement can affect the design of all types of ships, the financial operations of ship owners who are required to pay dues based on ships tonnages, the finances of harbour boards, Government maritime and other agencies who derive revenue from ships dues paid by shipping lines, and the manning scales of ships and scales of safety equipment on ships.

The present system of tonnage measurement is well outdated and is giving rise to numerous complications in shipping administration and finance. The current tonnage measurement system stems from the Merchant Shipping Act of 1854. Most countries continue to use the basic United Kingdom system, but some do not and as a result it is commonplace for ships to have to carry three or more sets of tonnage papers for presentation at particular ports.

The International Maritime Consultative Organisation (IMCO) has had this matter under intensive study for some time through a subcommittee of experts. Certain progress was made, but the need for a standard international system still remained. In 1963 an attempt was made to remove one of the outstanding anomalies in the present system. The technical subcommittee made certain recommendations regarding the treatment of shelter deck spaces which was adopted by the IMCO General Assembly.

Continuing its endeavours to solve this problem which is of international importance, IMCO decided at its 1967 General Assembly to convene the International Conference in London which Mr Jones attended. A draft convention was approved at the conference which will come into force after it has been ratified by 25 member governments.

The design of government ships is another important facet of the work of Mr Jones in his capacity as Naval Architect. Mr Jones has worked very closely in the past with N.Z. Railways and the U.K. consultants in the design and construction of the Cook Strait ferries *Aramoana* and *Aranui* and also provided similar services in the design and construction of the Island trader *Moana Roa*. As a result of his discussions in London, tenders for a third Cook Strait ferry are expected to be called in the near future.

UNIFORMS AND HOUSE FLAGS

A sidelight to the commissioning of the *James Cook* was the impressive new uniform of the ship's officers. As can be seen elsewhere in this Journal the officers are now smartly attired in Merchant Navy-type uniforms with Merchant Navy cap badge and gold braid on the sleeves.

Also considered and currently being examined is the provision of a house flag for all the department's ships. Envisaged is a dark blue flag incorporating the New Zealand ensign in the top lefthand corner and the seal of the department on the fly of the flag. The flag, if adopted, would be flown from the main mast of the department's ships, but would not replace the New Zealand ensign which is flown from the stern by all Government ships.

RESEARCH DIRECTOR TO REMAIN

Mr G. D. Waugh who joined the department 3 years ago as a marine biologist and subsequently was appointed Director of Research, is to continue for a further 3-year term as Director. It may not be generally realised that Duncan Waugh is on secondment from the British Government and it would have been a severe loss to the Research Division and the department if he had returned to England at the expiry of his first 3-year term.

The culmination of his first period with the Research Division was naturally enough the new research ship *James Cook,* and with his sights set on the proposed new research laboratory at Evans Bay the next 3 years will undoubtedly see further expansion and progress in the Fisheries Research Division under the guidance of its popular Director.

NO *GOTHIC* FORMAL INQUIRY

The department has been advised by the Board of Trade in London that they do not intend to hold a formal inquiry into the tragic fire on board the *Gothic* last year. In a letter from the Secretary to the Board of Trade to the department, the Board congratulated the department and its officers on a first-class preliminary inquiry report which was submitted to them and stated that in view of the excellence of this report they did not consider it necessary to hold a formal inquiry. Mr B. Scully, the Superintendent of Mercantile Marine at Wellington, was the officer responsible for the preliminary inquiry, and he and other officers concerned are to be congratulated for a job well done.

THREE KINGS ISLANDS HAVE UNEXPECTED VISITORS

As a result of a recommendation of the Navigational Subcommittee on the Prevention of Pollution of the Sea by Oil a proposal was made in May of last year to install an automatic light on the Three Kings Islands.

The Three Kings Islands, situated 37 miles north of Cape Reinga, were considered a potential hazard to the large ocean-going tankers delivering oil to the Marsden Point oil refinery. The remoteness of these islands posed special problems in connection with the installation of navigational lights and various methods were considered in the early planning stages.

Proposals included freighting of equipment and personnel from Cape Reinga, the use of the Naval survey ship HMNZS *Lachlan* or hiring an ocean-going barge with tug. All proposals included the use of a helicopter. Routine servicing of any light installed on the island also posed problems due to its remoteness and in deciding upon the type of lighting equipment to be installed, this had to be considered.

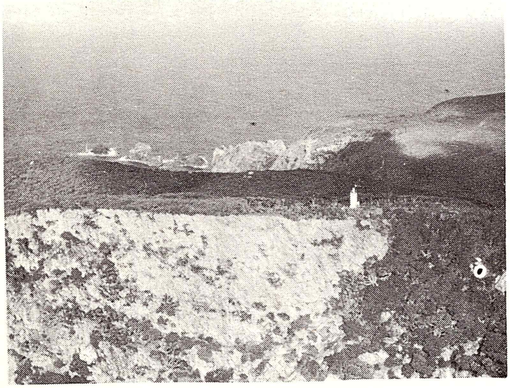
In February the Nautical Adviser, Captain H. Boyack, conducted a preliminary survey of the islands with the assistance of the Navy's survey vessel *Lachlan* and a RNZAF helicopter. With Captain Boyack was Mr W. Tait, Plant Maintenance Supervisor, and an electrical engineer from the MOW in Auckland.

After embarking on the *Lachlan* at Auckland on 24 February, the party arrived at the Three Kings Islands the following day, being lifted on to the island by helicopter. The first priority was the clearing of an area to permit the helicopter to land and with the assistance of Navy personnel this was soon completed. The helicopter then ran a shuttle service from the *Lachlan* to the site carrying material and equipment to construct a concrete foundation for the light tower. This was completed on the following day, the party then leaving the island. The site for the automatic light is 920 ft above sea level making it the highest navigational light in New Zealand.

With the fixing of the site and the construction of the concrete base, detailed planning commenced on the installation of the tower and light itself. The tower used at Three Kings is a 12 ft high square aluminium structure fabricated in Lower Hutt and fitted out at the Seaview store. The tower can be adapted for either gas or battery operation, is easily transportable, weatherproof, and completely self-contained.

The light decided upon was battery operated group-flashing light of 14,000 candelas, situated at a height of 934 ft with a range of 24 miles. Supervising the installation of the tower and light was Mr M. V. Linton the department's

Mark Linton gives a farewell pat to the new light tower at Three Kings.



A view of Three Kings Island with the tower showing out clearly as a daymarker.

Foreman/Mechanic at Auckland, and on 21 April HMNZS *Lachlan* sailed from Auckland with the light, structure, and material on board.

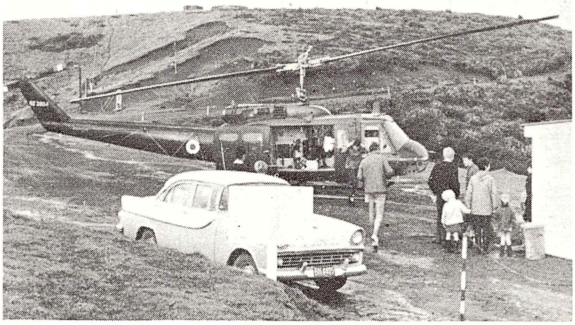
Assisting in the erection of the light was a helicopter owned by Alexander Helicopters which was taken on board the *Lachlan* at North Cape. Erection of the light commenced on Friday, 25 April and all gear was landed and tower in position in a matter of 2 hours. However, on returning to the *Lachlan* the helicopter crashed into the sea and was severely damaged, although fortunately there was no injury or loss of life.

While the *Lachlan* was busy rescuing the pilot and his helicopter the servicing team prepared to climb down the island on to the west landing, but a message was received that the Air Force were flying out an Iriquoi helicopter which duly arrived after dark, picking up the team and carrying them back to the mainland. The light was finally established on Sunday, 27 April.

Since the light was installed it has been found impracticable to use the wind charger to charge the batteries and recently with the assistance of a RNZAF helicopter a further visit was made to the island and a decision taken to install a small diesel generating plant adjacent to the tower. This additional equipment will ensure a dependable light on Three Kings Island. In addition a radio monitor to Cape Reinga light station is being investigated to give warning of failure of any of the components of the Three Kings light.

The hazards associated with the installation and maintenance of automatic lights around the New Zealand coast has been dramatically illustrated with the disastrous crash of the helicopter. Without the splendid co-operation from the Royal New Zealand Navy and Air Force the operation would have been extremely protracted and costly. The successful conclusion of this exercise has provided a very valuable navigational aid to large overseas tankers approaching the coast and lessens the risk of a catastrophic accident and large scale oil pollution in northern waters.

Equipment being carried to the tower from the helicopter landing pad.



A RNZAF helicopter stops at Cape Reinga. The radio beacon towers and reservoirs can be seen in the background.

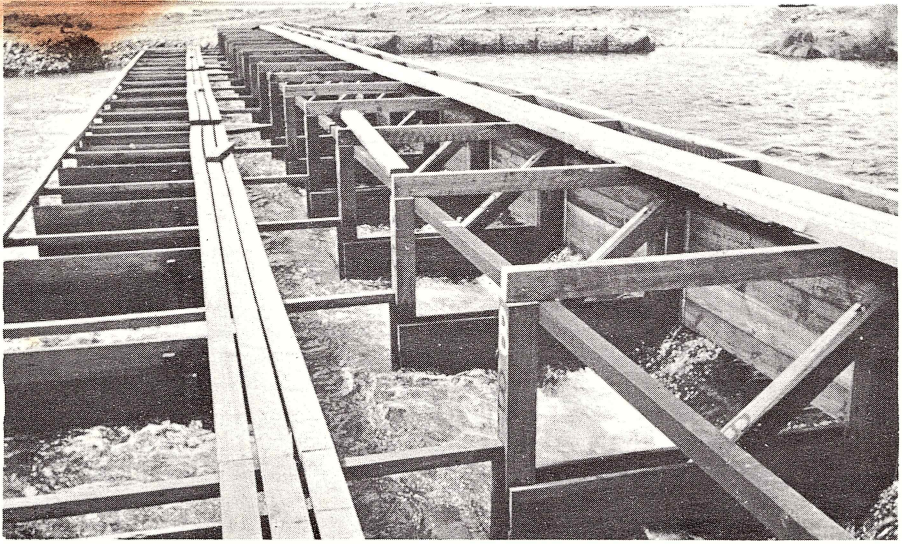
SALMON INVESTIGATION ON THE RAKAIA RIVER

The hatching and stocking of waters with quinnat salmon have, except for some early and non-productive efforts of acclimatisation societies in the last century, always been carried out by the Marine Department. The first quinnat salmon eggs were imported in the 1870s and on arrival the ova from these shipments were distributed to acclimatisation societies and the young fish hatched were liberated in rivers from North Auckland to the far south. No successful results were obtained from these shipments.

In 1899 the Government decided to make a vigorous and systematic effort to establish this species and regular importations of half a million eggs were made each year from 1899 to 1906. A hatchery was built at Hakataramea and this was instrumental in establishing quinnat salmon in the Waitaki River where they spread to most major rivers on the east coast of the South Island.

While spawning surveys have been carried out for many years the establishing of a salmon trap is the first truly scientific step by the department in its investigation of salmon in the Rakaia River. The purpose of the investigation is to examine the annual run of adult salmon up-river and the resultant run of young salmon heading downstream to the sea after the spawning season. Resulting from this investigation the department will then be able to determine the best management policy and what measures should be taken to preserve and improve the salmon fishery in southern rivers.

The investigations at the Glenariffe trap are now in their third year and valuable material is already emerging. If the population of quinnat salmon is to expand and the sport enhanced, then the current work at Glenariffe may provide many of the answers to the problems confronting this fishery.



Fisheries staff are shown working on the salmon trap at Glenariffe.

A LOOK AT THE AUSTRALIAN LIGHTHOUSE SERVICE

Norm. Miller, the Department's Lighthouse Instructor, undertook a private visit to Australia and while there, took time off on request of the Department, to look at the Australian Light Service in Sydney, Melbourne and Adelaide. The following is an account of what he saw and learnt.

The service is controlled by the Federal Government, operates under the Department of Shipping and Transport, and is divided into six regions (largely based on the State system).

The service operates 56 manned lights; 233 unattended lights; light buoys, light vessels and miscellaneous aids. The Australian Service is slightly more than twice the size of New Zealand's Service and is controlled from Melbourne, which determines policy and carries out planning, engineering and research work.

A feature of the Australian Service is the employment of 'degree' engineers, the Service also employing a radio engineer, technical officers, draughtsmen, trainee engineers, mechanics, carpenters and labourers.

There are lighthouse tenders located in Melbourne, Brisbane and Perth. These are sister ships of 2000 tons built in Australia about 3 years ago and especially designed for lighthouse work. Each is equipped with a helicopter landing deck and an amphibious landing vehicle. The 'LARC' as this landing vehicle is called is used for handling the tenders in port in addition to normal work at lighthouse landings.

Workshops are located in each region, and the maintenance staff after training and experience are expected to undertake repairs of equipment except radio beacons. They are experienced in all forms of diving for which they receive extra allowances, and are qualified in the use of explosives. They are provided with all the tools required for their work, laundry facilities and working clothing.

A lightkeeper's life in Australia is very similar to that of a New Zealand keeper, although as can be seen from the accompanying photograph, some of the lighthouses are vastly different from ours.

Permanent relieving keepers are not employed, temporary keepers being recruited locally for relieving duties.

Houses, furniture, fuel and light are free and salary scales are approximately the same as that for New Zealand keepers. However, allowances for remoteness, weather reports and overtime increase their salaries and they are supplied with uniforms which are worn at all times while on duty.

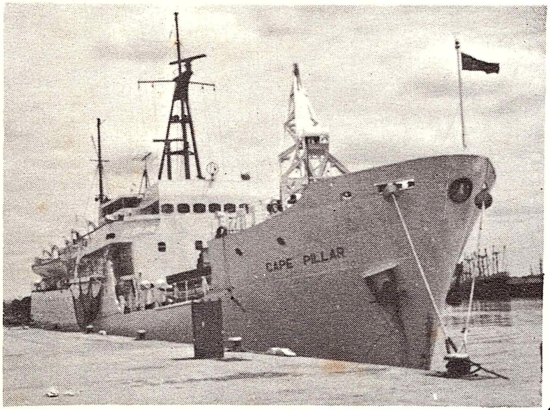
Because of the size of the country and difficulty of transport Australian keepers are not moved from region to region; each of the six regions being regarded as a complete service. A keeper, after his first year's service, lists the stations in the region he would like to be sent when a transfer arises. The keeper who is senior in service in each region is placed on the station of his choice and remains there until retirement or resignation. Other keepers in order of seniority are also placed on stations of their preference as these stations become vacant, if this can be arranged. Eventually a keeper will reach the station of his choice after a series of transfers.

Training of light keepers (except on station) has not yet commenced in Australia, although planning for a school is under way. Norm. Miller spent three days of his time discussing this topic and was able to pass on information gained in our Lighthouse School.

Visitors to Lighthouses are encouraged, conducted visits through the lighthouses being permitted between specified hours on certain days of the week.

The Australian service is undergoing electrification but it will be obvious that with the enormous distances around the coastline, this will take some time. Currently, there are 19 manned stations still burning kerosene.

Where stations have been electrified, the old and larger lenses have been replaced by smaller and more modern lenses, with many of the newer revolving lights supported by a mercury bowl system. A radical innovation is that by utilising reflectors lenses are dispensed with entirely. This type of light may be the pattern for any new major lights installed in Australia in the future.

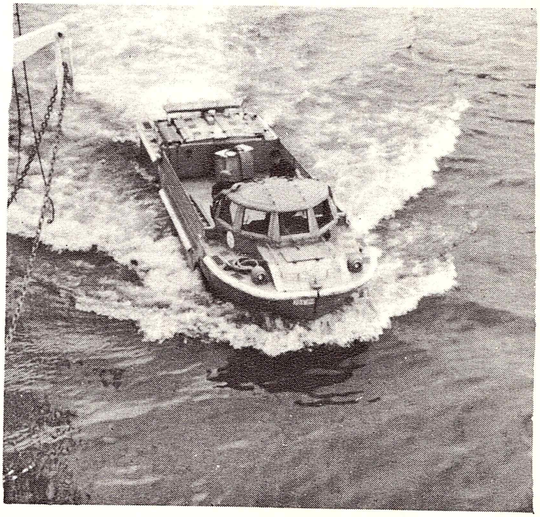


Australian Lighthouse Tender *Cape Pillar.*

Lighthouse structures vary greatly in different areas. Those in New South Wales are substantial stone structures; in other parts of Australia they are not so imposing, with some merely standing in the sea on platforms.

In the Central Office in Melbourne, research is being carried out on future developments in Lighthouse engineering. Various sources of power supply are being studied, such as solar batteries, power from wave motions, nuclear power and further developments of wind power. The ultimate development is expected to be complete automation of all major lights with an engineer controlling a group of lights from a central control point. The Australian Service is about to embark on a programme of modernisation, new construction and reconstruction of navigational aids over a period of ten years.

Norm. Miller, during his time with the Australian Service, received every assistance and hospitality of which he was very appreciative and his visit proved a rewarding and valuable experience.



"LARC" Amphibious Vehicle.

A. R. Shearer, Government Printer
Wellington, New Zealand
1969